the mullein-feeding *Cucullia* group or the case of *castrensis*, whose egg overwinters in Europe and also (presumably) in Persia; a confident inference of their origin seems impossible.   There remain a number of species of more restricted range which, not occurring in very different climates, offer no chance of comparison in their reactions to local climate; for these, therefore, also no suggestion, based on the above criteria, is here offered as to their origin; we should, however, probably not go far wrong in postulating for *territa, semiramis, spectabilis, elbursica, forficula, nyctymerina*, and *dentinosa* an origin on the steppe mountains of Anatolia and Iran, beyond which their range does not extend very far.   Such a postulation, however, will rest on zoogeographical grounds.

It is indeed interesting to compare the guesses made above on the basis of biological and phenological criteria with the zoogeographical classification of the same species.   For instance, the vast range of *castaneae* puts it almost in the Geopolitan category; it seems to be a primitive species of great adaptability that originated in a tropical or semi-tropical climate.

LARVAL HABITATS OF APATURA IRIS.
By A. J. Wightman, F.R.E.S.

Having been officially requested, in common with the rest of the public, to keep off the roads on Easter Monday last, I abandoned a projected trip to Kent for pupae of *A. cinerea* and found myself at a dead end in my home locality, with a whole day in front of me.

I had for several years intended, when the time and mood should be upon me, to try and find just how widespread and plentiful *A. iris* was around this area. Occasionally, when beating for other things, I have found the larva of *iris* on the sheet, but always singly (and the idea being at the moment in mind, as a result of finding a small larva of the species among sallow catkins I had taken for larvae of *Xanthia fulvago*), I spent the day among the sallows in the woods. I used a car to get from one place to another and so covered a considerable area, sampling rather than searching each selected locality.

I had been advised to ignore sallows in open and dry situations and so spent most time in damp and narrow rides in rather heavily wooded country.

I worked only large-leaf sallows, not because all the " books " say this is the right thing to do, but because those of the small-leaf varieties, in common with all the foliage around, had been stripped by thousands, probably millions, of larvae of Geometers, Noctuae, and Micros. It was May, but most trees and shrubs were as bare as in midwinter. I have never seen such devastation before.

I first searched the selected bushes and then beat them and in this way had taken several half-fed *iris* larvae, widely separated from each other, when I chanced upon an old stone quarry, in which there was a large tree-like sallow, the branches of which were 20 feet from the ground and out of reach except at one spot, where a high mound of earth made it possible to clamber up and hook down a single fair-sized branch.

This I carefully searched and was about to release, when I noticed a half-grown larva of *iris* near the extremity of the branch I held in my hand, and when taking this found two more on the same shoot, on adjacent leaves. I was now satisfied that the insect is widely spread and by no means rare around this area, and so gave up active search and merely wandered around to see if there were any similar sallows in nearby areas. I found several very similar indeed, but no larvae, so I am still no wiser as to what the special requirements of this species are. Indeed, on the way out of the woods I beat a fallen sallow which was lying prone and took a larva from it. This fallen sallow was absolutely in the open.

These larvae were kept in a leno cage 24 by 18 by 12. I provided them with a fresh small branch of large-leaved sallow daily, and they changed from the old to the newer branch about every other day. This larva is hard to see. I knew there were eight larvae in the cage, but could seldom see more than five or six, even when I took the branches out and looked them over, until the second or third try. One larva was always on the underside of a leaf. All pupated the same week and all used a sallow leaf to pupate on. They pupated about sundown and I watched several of them go through this stage. The previously inactive larva would suddenly begin to sway from side to side violently and at the same time to expand itself from the normal larval shape to that of the pupa. This caused the larval skin to split at the bottom (head) and from this stage until the pupa was completely free averaged three minutes. The violent movement was continued after the pupa was free until the larval skin had actually fallen and even after, apparently to make sure that the skin was gone. I saw no sign that this pupa is especially liable to fall at this time; they all seemed well anchored, and to know it. The imagines all emerged before mid-day and there were 6 ♂s to 2 ♀s. The season was early, all out by July 20th, and all of large size. Being used to dealing with Noctuae, I was not equal to dealing with this species. Three emerged one day and while I was taking one out of the cage the other two, as quick as thought, were out and away through the outhouse door.

ON THE OCCURRENCE OF NORTHERN AND SOUTHERN SPECIES OF CARABIDAE IN A SECTION OF THE WEALD.

By R. A. CROWSON, B.Sc.

For the last three years I have been engaged on a detailed study of the beetles of the district around Tunbridge Wells. The precise area covered by my investigations is as follows:—Northern boundary—the top of the escarpment of the North Downs between Westerham and the Medway gap; Southern boundary—the Forest Ridge of Sussex between West Hoathly and Mayfield; Western boundary—the road from Westerham to East Grinstead and West Hoathly; Eastern boundary—the River Medway between Halling and Yalding, the river Teise to Goudhurst and the road to Kilndown, Flimwell, and Mayfield. It will be seen that this defines a sector of the Weald with the outcrops of all the Geological